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EXAMINER	
TAYONG, HELENE E	

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/775,771	WORLEY ET AL.	
	Examiner	Art Unit	
	HELENE TAYONG	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 17-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 17-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *9/2/04* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed on 6/18/08.

Claims 1-10 and 17-25 are pending in this application and have been considered below.

Response to Arguments

2. Applicants arguments regarding the rejection claims 1, 2, 3, 5, 6, 7, 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Dai et al (US 2003/0040274) in view of Oshima et al (U.S. Pat. No. 4,567,485) have been fully considered but they are not persuasive. The examiner thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meets the claimed limitation as rejected.

(1) Applicant's arguments: "(a) *The system in Dai et al does not involve the use of any "noise" signal. Nor would the implementation of a known noise signal appear to provide any improvement or enhancement to the system disclosed in Dai et al. (b)There is no suggestion in Oshima et al as to how its teachings could be applied to a system such as that shown in Dai et al, and further modified, such that a noise signal is used to generate a composite signal having a known operating point, that can be analyzed by a computer system along with the beacon signal, to extrapolate the signal quality of a signal leaving an output from a satellite transponder. (c)These isolated teachings appear to have been combined in hindsight using the present application as a roadmap*"

The examiner's response: The Examiner points to a communication system of Deli et al, which comprises a first (40) and a second (20) communication system (figs. 1 and 2). The second communication system generates a beacon signal. An uplink power control uses the beacon signal feedback data to adjust transmit power. On page 3, [0034], lines 17-19), Dai et al discloses that the ULPC status packets comprises **the noise floor**, SNR ...). On page 4, [0043[-[0044]), Dai et al further discloses the noise power equation wherein the **noise floor** change caused by the fade and the nominal receiver noise floor. Dai et al does not explicitly disclose how to generate the noise signal. The Examiner further points out that a second reference, Oshima et al that is in the same endeavor teaches a communication system with first communication system (11) and second communication system (12). This system uses a beacon signal generated at the second communication system for power control (col. 5, lines 17-31). The Examiner further points out that in (fig. 2, 16), a pilot information signal PIN is generated by a pilot generator 16 to provide a reference frequency for the single channel per carrier scheme. This reference frequency is used for the calculations o of parameters such as the carrier-to-noise power ratio (C/N)r (col. 8, lines 56-65).

Regarding response of no suggestion in Oshima et al as to how its teachings could be applied to a system such as that shown in Dai et al, when an obviousness determination relies on the combination of two or more references, there must be some suggestion or motivation to combine the references. See In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998). The suggestion to combine may be

found in explicit or implicit teachings within the references themselves, from the ordinary knowledge of those skilled in the art, or from the nature of the problem to be solved. See id. at 1357, 47 USPQ2d at 1458. Moreover, as long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor. See In re Dillon, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990)(en banc), cert. denied, 500 U.S. 904 (1991) and In re Beattie, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992).

The Dai et al communication system has to have a pilot information signal PIN is generated by a pilot generator 16 to provide a reference frequency for the single channel per carrier scheme. This reference frequency is used for the calculations o of parameters such as the carrier-to-noise power ratio (C/N)r (col. 8, lines 56-65) in order to provide a more efficient power control system for use in an earth station of a satellite communication network which system is capable of controlling transmission power of the uplink signal of that earth station (col. 2, lines 20-26). Thus as stated by the Examiner, the advantages described by Oshima et al. would have motivated one of ordinary skill in the art to generate a pilot information signal PIN as taught by Oshima et al in the system of Dai et al.

Regarding response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 ,2,3,5,6,7,9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai et al (US 20030040274 A1) in view of Oshima et al (US 4567485).

(1) with regards to claims 1 and 7;

Dai et al disclose in figs. (1) and (2) a method for detecting and correcting for losses influencing a signal being radiated, in electromagnetic wave form, to a first communications station (40) from a second communications station (20), to provide a more accurate signal quality value (transmit power) determination of said signal, said method comprising:

using said first communications station to receive said signal transmitted from said second communications station (fig. 2, 54, and 52 and pg. 2, [0029], lines 12-17);

generating a beacon signal from said second communications station(fig. 2, 20, [0006] lines 3-4 and pg. 2 [0029] lines 15-16).

monitoring a beacon signal from said second communications station to determine an atmospheric induced transmission loss (pg. 2, [0027], lines 1-3) affecting

said signal as said signal is transmitted from said second communications station to said first communications station (pg.2, [0030] to [0031]); and

using said atmospheric induced transmission loss(pg. 2, [0027], lines 1-3), said quantity of noise and said composite signal to extrapolate a signal quality value for said signal transmitted by said second communications station (pg. 2, [0032], lines 6-10).

Dai et al discloses all of the subject matter disclosed above, but for specifically teaching adding a quantity of noise to said signal received by said first communications station to produce a composite signal having a known operating point.

However, Oshima et al in the same field of endeavor teaches a signal generator (fig. 2, 16, col. 6 , lines 1-4). The Dai et al communication system has to have a pilot information signal PIN is generated by a pilot generator 16 to provide a reference frequency for the single channel per carrier scheme. This reference frequency is used for the calculations o of parameters such as the carrier-to-noise power ratio (C/N)r (col. 8, lines 56-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to be able to add the signal generator of Oshima et al in the system of Dai et al for adding a quantity of noise to said signal received by said first communications station to produce a composite signal having a known operating point in order to provide a more efficient power control system for use in an earth station of a satellite communication network which system is capable of controlling transmission power of the uplink signal of that earth station (col. 2, lines 20-26). Thus as stated by the Examiner, the advantages described by Oshima et al. would have motivated one of

ordinary skill in the art to generate a pilot information signal PIN as taught by Oshima et al in the system of Dai et al.

(2) with regards to claim 2;

Dai et al. further discloses using said first communications station (40) to receive said signal comprises transmitting said signal from a satellite based transponder (20) to said first communications station (fig. 2, 54, and 52 and pg. 2, [0029], lines 12-17).

(3) with regards to claim 3;

Dai et al. further discloses using said first communications station (40) to receive said signal comprises using a terrestrial based communications station (20) to receive said signal (fig. 2, 54, and 52 and pg. 2, [0029], lines 12-17).

(4) with regards to claim 5;

Dai et al. further discloses monitoring said beacon signal comprises using a beacon receiver to monitor said beacon signal to determine therefrom atmospheric downlink losses of said signal for use in determining said signal quality value (pg.2, [0030] to [0031]);

(5) with regards to claim 6;

Dai et al. further discloses wherein an absolute value of said transmission loss is used in determining said signal quality value (fig. 5, 68, pg 3, [0035], lines 15-19);

(6) with regards to claim 9;

Dai et al. further discloses using said communications station comprises using a terrestrial based station to receive said information signal (fig. 2, 20).

(7) with regards to claim 10;

Dai et al. further discloses wherein extrapolating said corrected Eb/No value comprises using a computer to determine said corrected Eb/No value (pg.2, [0033], lines 5-7).

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dai et al (US 20030040274 A1) and Oshima et al (US 4567485) and further in view of Wright et al (US 6272340 B1).

(1) with regards to claim 17;

Dai et al. discloses a system (fig.1) for correcting for losses effecting a signal being transmitted, in electromagnetic form, form a second communications station to a first communications station, in which said second communications station also transmits a beacon signal to said communication station (fig. 2), comprising;

a computer for using said quantity of noise, said composite signal, said downlink loss and said operating point to extrapolate a signal quality value, said signal quality value representing a measurement of a quality of said signal having said losses removed therefrom (fi.1, 28, pg. 2,[0025] and [0033] lines 5-7).

a beacon signal receiver(fig. 1 40) for receiving said signal and monitor a downlink loss affecting said beacon signal (fig. 2 pg.2, [0029]), said downlink loss associated with said beacon signal being representative of a downlink loss experienced by said signal (pg. 2, [0029]);

Dai et al does not specifically teach a subsystem for generating a known quantity of noise to be added to a signal transmitted from said second communications station;

However, Oshima et al in the same field of endeavor teaches a subsystem for generating a known quantity of noise to be added to a signal transmitted from said second communications station (fig.2, 16 and fig4, 48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the device of Oshima et al to the system of Dai et al in order to calculate interference added to the received signal and to modify receiver characteristics to produce an output signal for evaluations. The motivation to combine the device of Oshima et al to the method of Dai et al. would be to provide efficient way to judge system performance.

Dai et al. discloses all of the subject matter disclosed above, but for specifically teaching a combiner for combining said known quantity of noise with said signal to produce a composite signal;

However, Oshima et al in the same field of endeavor teaches a combiner (fig.2, 17) for combining said known quantity of noise with said signal to produce a composite signal (col. 6, lines 4-6);

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the device of Oshima et al to the system of Dai et al in order for producing the combination of all signals. The motivation to add the device of Oshima et al to the method of Dai et al. would be to process all signals at intermediate frequencies.

Dai et al. as modified by Oshima et al. discloses all of the subject matter disclosed above, but for specifically teaching an attenuator for receiving said composite signal and defining a known operating point for said composite signal.

However, Wright et al in the same field of endeavor teaches an attenuator for receiving said composite signal and defining a known operating point for said composite signal (fig. 3, 46, col. 6, lines 29-35);

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the devices of Wright to the system of Dai et al as modified by Anderson in order to provide a satellite based cellular communications system which utilizes a load shedding method to enhance uplink margin with combined FDMA/TDMA uplinks. The motivation to combine the device of Wright to the method of Dai et al. as modified by Oshima et al would be to eliminate the requirements of multiple rate demodulators on-board the satellite to reduce satellite complexity and provide terrestrial terminals that can support different numbers of carrier channels to provide varying fade capability such that the terrestrial terminals are scaleable in size and cost.

6. Claims 4,8,18,19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai, et al, and Oshima et al as applied to claims 1,7 and 17 above, and further in view of Nakamura (US 7130577 B2).

(1) with regards to claims 4 ,8 and 18;

Dai, et al. as modified by Oshima et al discloses all of the subject matter disclosed above except for specifically disclosing a system for generating noise

between certain frequencies, wherein adding a quantity of noise comprises adding a quantity of noise having a frequency within a range of between about 950 MHz-1450 MHz..

However, Nakamura in the same field of endeavor, teaches a low Noise Block down-converter (LNA) incorporated in a receiver of an antenna for satellite signal transmission/reception that produces a quantity of noise having a frequency within a range of between about 950 MHz-1450 MHz as applied to claims 4,8 and 18 (col.1, lines 33-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Nakamura 's LNA, in the system of Dai et al in order to provide a harmonic component for a signal received from a satellite acting as an interference wave with respect to a reception signal. The motivation to utilize the method of Nakamura in the system of Dai et al. would be to provide a low noise converter which is of reduced cost and of high performance property, and less susceptible to a spurious harmonic component.

(2) with regards to claim 19;

Dai, et al. as modified by Oshima et al discloses all of the subject matter disclosed above except for specifically disclosing a system wherein said subsystem for generating a known quantity of noise further comprises a local oscillator and mixer.

However, Nakamura further discloses in (fig 2) wherein said subsystem for generating a known quantity of noise further comprises a local oscillator (9,10) and mixer (11,12) as applied to claim 19 (col. 5, lines 16-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Nakamura 's LNA, in the system of Dai et al in order to provide a harmonic component for a signal received from a satellite acting as an interference wave with respect to a reception signal. The motivation to utilize the method of Nakamura in the system of Dai et al. would be to provide a low noise converter which is of reduced cost and of high performance property, and less susceptible to a spurious harmonic component.

(3) with regards to claim 20;

Dai, et al. as modified by Oshima et al discloses all of the subject matter disclosed above except for specifically disclosing wherein said first communications station generates said signal as comprised of one of a horizontally polarized signal component and a vertically polarized signal component..

Nakamura further discloses in (fig 2) wherein said first communications station generates said signal as comprised of one of a horizontally polarized signal component and a vertically polarized signal component as applied to claim 20 (col. 4, lines 62-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Nakamura 's LNA, in the system of Dai et al in order to provide a harmonic component for a signal received from a satellite acting as an interference wave with respect to a reception signal. The motivation to utilize the method of Nakamura in the system of Dai et al. would be to provide a low noise converter which is of reduced cost and of high performance property, and less susceptible to a spurious harmonic component.

7. Claims 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai et al , Oshima et al., Wright and Nakamura as applied to claims 20 and 23 above, and further in view of Marko (US 7136640 B2).

(1) with regards to claims 21 and 23;

Dai et al. as modified by Oshima et al, Wright and Nakamura discloses all of the subject matter disclosed above except for particularly discussing a splitter for splitting said known quantity of noise such that a sub quantity of said noise is separately applied to each of said horizontally and vertically polarized signal components of said signal.

However, Marko in the same field of endeavor, teaches a satellite system (fig.7) that include a splitter (114) (col. 5, lines 36-40) to separate signal components based on their frequencies.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the device of Marko in the method of Dai et al as modified by Anderson, Wright and Nakamura in order to provide a satellite broadcast system that selectively switches signals transmitted from satellites in selected tundra orbit positions. The motivation to utilize Marko's device in the method of Dai et al. as modified by Anderson, Wright and Nakamura would be to improve reception of the signals, for example by increasing elevation angle.

(2) with regards to claim 24;

Dai et al. as modified by Oshima et al, Wright and Nakamura discloses all of the subject matter disclosed above except for particularly discussing a system wherein said

second component is input to said combiner to be combined with said known quality of noise .

However, Marko in the same field of endeavor, teaches a a system (fig 2) wherein said second component is input to said combiner to be combined with said known quality of noise as applied to claim 24 (col. 6, lines 66-67 to col. 7, lines 1-3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the device of Marko in the method of Dai et al as modified by Anderson, Wright and Nakamura in order to provide a satellite broadcast system that selectively switches signals transmitted from satellites in selected tundra orbit positions. The motivation to utilize Marko's device in the method of Dai et al. as modified by Anderson, Wright and Nakamura would be to improve reception of the signals, for example by increasing elevation angle.

8. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai et al., Oshima et al and Wright as applied to claim 17 above, and further in view of Fleming III et al(6212360 B1).

(1) with regards to claim 22;

Dai et al as modified by Anderson and Wright discloses all of the subject matter disclose above, but for specifically teaching a separate attenuator for each of said vertically and horizontally polarized signal components, for defining said known operating point..

However, Fleming III et al. in the same field of endeavor teaches a separate attenuator (375) for each of said vertically and horizontally polarized signal components, for defining said known operating point (col. 4, lines 39-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Flemming III et al in the method of Dai as modified by Anderson and Wright in order to control the signal level transmitted by the earth-station in a network. The motivation to combine Fleming III et al.'s method in the system of Dai as modified by Anderson and Wright would be to improve transmission method of power in a VSAT network.

(2) with regards to claim 25;

Dai et al as modified by Anderson and Wright discloses all of the subject matter disclose above, but for specifically a demodulator responsive to said known quantity of noise and said composite signal for generating said signal quality value.

However, Fleming III et al. in the same field of endeavor teaches a demodulator (381,383,387) responsive to said known quantity of noise and said composite signal for generating said signal quality (col. 6, lines 47-54)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Flemming III et al in the method of Dai as modified by Anderson and Wright in order to control the signal level transmitted by the earth-station in a network. The motivation to combine Fleming III et al.'s method in the system of Dai as modified by Anderson and Wright would be to improve transmission method of power in a VSAT network.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE TAYONG whose telephone number is (571)270-1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helene Tayong/
Examiner, Art Unit 2611

July 14, 2008
/Shuwang Liu/
Supervisory Patent Examiner, Art Unit 2611